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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/684,064

10/08/2003

Clyde F. Parrish

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NASA JOHN F. KENNEDY SPACE CENTER  
MAIL CODE: CC-A/OFFICE OF CHIEF COUNSEL  
ATTN: PATENT COUNSEL  
KENNEDY SPACE CENTER, FL 32899

EXAMINER

FLETCHER III, WILLIAM P

ART UNIT

PAPER NUMBER

1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/684,064	<b>Applicant(s)</b> PARRISH, CLYDE F.	
	<b>Examiner</b> William P. Fletcher III	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/8/2003</u>   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of claims 1-11 in the reply filed on 12/6/2006 is acknowledged.

A. The traversal is on the ground(s) that: "The search for these reactants having the explicit relationship as claimed would logically encompass both the material (or system) and its method (or process) of application. Because the search would necessarily have to take place in both areas, there is no undue amount of searching required."

B. This is not found persuasive because, for purposes of the initial requirement, a serious burden on the examiner may be *prima facie* shown if the examiner shows by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02. This *prima facie* case is set-forth in the prior Office action. The burden on the examiner further extends to the patentability issues associated with, and evolving as a result of, searching additional inventions. Issues related to a process are frequently very different from those related to a material. For example, the issues related to the structural/compositional requirements of a system/material need not be familiar to an examiner of specific processes. Consequently, examination of process claims 1-11 and system claims 12-21 present a serious burden on the examiner both because of the distinct nature of the inventions, as explained in the prior Office action, and because of the evolution of patentability issues related to searching multiple and distinct inventions.

- C. The requirement is still deemed proper and is therefore made FINAL.
2. Claims 12-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/6/2006.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 10/8/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

4. The drawings were received on 10/8/2003. These drawings are acceptable.

***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: PROCESS FOR SELF-REPAIR OF INSULATION MATERIAL.

***Claim Objections***

6. Claims 2 and 3 are objected to because of the following informalities:

A. Claim 2 should read:

The self-repair process of claim 1, whereby said first reactant or said second reactant is selected from the group ~~comprising~~ consisting of a monomer, a catalyst, a reactant ~~[[of]]~~ that react to form a condensation polymer, a fusible polymer, and a chemical heater.

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B. Claim 3 should read:

The self-repair process of claim 2, whereby said first reactant and said second reactant are a reactant ~~[[of]]~~ that react to form a condensation polymer.

C. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 1 590 958.

A. This reference teaches a process for the repair of insulation material. The insulation material, applied to a communications or high voltage cable, contains microcapsules containing reactants that react to form a replacement polymer. The replacement polymer repairs a break, crack, etc., in the insulation. The exemplified, non-limiting polymer is polyurethane.

B. For reference, please see: (1) the attached machine translation of the last two paragraphs of this reference; and (2) the description of this reference at 1:46-60 of US 6,534,715 B1.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1 590 958.

A. The teaching of this reference is detailed above.

B. While this reference teaches an exemplary, non-limiting embodiment of polyurethane, it does not teach the specific materials recited in these claims.

C. This reference clearly suggests to one of ordinary skill in the art that any suitable combination of reactants may be used to supply the replacement polymer.

D. Consequently, it would have been obvious to one of ordinary skill in the art to modify the process of DE 1 590 958 so as to utilize whatever reactants yield the replacement polymer, dependent upon the composition of the insulation material.

11. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1 590 958, as applied to claim 1 above, and further in view of WO 02/13786 A2.

A. The teaching of DE 1 590 958 is detailed above.

B. While this reference refers to encapsulation of the reactant material, it does not explicitly teach that the first and second reactant materials are disposed within a single microcapsule.

C. WO '786 teaches that hollow, multi-shell particles composed of two or more concentric spheres of different materials are known [15:22-24].

D. It would have been obvious to one of ordinary skill in the art to modify the process of DE 1 590 958 so as to substitute, for the reactants each encapsulated in

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their own microcapsules, the reactants encapsulated in a single, multi-shell microcapsule. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of: (1) successfully incorporating the replacement polymer material; and (2) making storage and preparation easier by having a single kind of microcapsule to incorporate, rather than the two kinds of microcapsules taught by DE 1 590 958.

E. With specific respect to claim 10, the WO reference teaches average particle diameters for these particles of up to 100 microns [see claim 16, for example].

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

A. Kaltenborn et al. (US 6,548,763 B2) teaches self-healing electrical insulators having an encapsulated hydrophobizing agent.

B. White et al., "Autonomic healing of polymer composites," Nature, Vol. 409, 794-797, 15 Feb. 2001, teaches self-healing polymers in which a single reactant is encapsulated.

C. Wool, R. P., "A material fix," Nature, Vol. 409, 773-774, 15 Feb. 2001, teaches the same.

13. The prompt development of clear issues in the prosecution history requires that applicant's reply to this Office action be fully responsive (MPEP § 714.02). When filing an amendment, applicant should specifically point out the support for any amendment made to the disclosure, including new or amended claims (MPEP §§ 714.02 & 2163). A fully responsive reply to this Office action, if it includes new or amended claims, must therefore include an explicit citation (i.e., page number and line number) of that/those portion(s) of the original disclosure which applicant contends support(s) the new or amended limitation(s).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 0900h-1700h.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William Phillip Fletcher III  
Primary Examiner  
Art Unit 1762

January 6, 2007